

providing a second layer of the particulate material over the first layer; and dispensing the fluid onto a first region of the second layer.

21. (Amended) A method of three-dimensional printing, comprising:
providing a first layer of a free-flowing particulate material comprising a reactant selected from the group consisting of metals, minerals and ceramic oxides;
A² dispensing a homogeneous fluid onto a first region of the first layer, the fluid comprising a reactant and the first region being contiguous with a second region comprising the free-flowing particulate material;
allowing a reaction to occur between the particulate reactant and the reactant in the fluid, the reaction causing a solidified material to form in the first region;
providing a second layer of the particulate material over the first layer; and dispensing the fluid onto a first region of the second layer.
27. (Amended) The method of claim 21, wherein the reactant is a metal selected from the group consisting of iron, copper, carbon steel, stainless steel, aluminum, brass, molybdenum, tungsten, magnesium, and cobalt.
- A³* 28. (Amended) The method of claim 21, wherein the reactant is a ceramic oxide selected from the group consisting of alumina (Al_2O_3), anatase (TiO_2), silicon dioxide, aluminum silicate and glass.
29. (Amended) The method of claim 21, wherein the reactant is a mineral selected from the group consisting of limestone (CaCO_3), magnetite, calcium silicate (CaSiO_4), hydrous calcium sulfate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$), hydrated lime ($\text{Ca}(\text{OH})_2$) and calcium phosphate.
30. (Amended) A method of three-dimensional printing, comprising:

providing a first layer of a free-flowing particulate material comprising a particles having a reactive surface;

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dispensing a fluid onto a first region of the first layer, the fluid comprising a reactant and the first region being contiguous with a second region comprising the free-flowing particulate material;

allowing a reaction to occur between the reactive polymer and the reactant in the fluid, the reaction causing a solidified material to form in the first region;

providing a second layer of the particulate material over the first layer; and dispensing the fluid onto a first region of the second layer.

55. (Amended) A method of three-dimensional printing, comprising:

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providing a first layer of a free-flowing particulate material comprising a reactant;

dispensing a fluid onto a first region of the first layer, the fluid comprising a reactant and the first region being contiguous with a second region comprising the free-flowing particulate material;

allowing a reaction to occur between the particulate reactant and the reactant to form an adhesive, the reaction causing a solidified material to form in the first region;

providing a second layer of the particulate material over the first layer; and dispensing the fluid onto a first region of the second layer.

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57. (Amended) The method of claim 56, wherein the reactant in the fluid is selected from the group consisting of 2-amino-2-methyl 1-propanol (AMP), polyethyleneimine 2-amino-2-methyl 1-3 propanediol (AMPD), 2-amino-2-ethyl 1-3-propanediol (AEPD), and a hydroxide.

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59. (Amended) The method of claim 55, wherein the particulate reactant is selected from the group consisting of sodium carbonate and potassium aluminum sulfate.

A⁷ 73. (Amended) A method of three-dimensional printing, comprising:
providing a first layer of a free-flowing particulate material comprising an adhesive;

dispensing a first fluid onto the first layer to dissolve the adhesive;

dispensing a fluid solidifying agent onto a first region of the first layer and the first region being contiguous with a second region comprising the free-flowing particulate material;

allowing a reaction to occur between the first fluid and the solidifying agent, the reaction causing a solidified material to form in the first region;

providing a second layer of the particulate material over the first layer; and

dispensing the fluid onto a first region of the second layer.

A⁸ 85. (Amended) A method of three-dimensional printing, comprising:

providing a first layer of a free-flowing particulate material comprising a first reactant and a second reactant;

dispensing a fluid onto a region of the first layer and the first region being contiguous with a second region comprising the free-flowing particulate material;

allowing a reaction between the first and second reactants to occur, the reaction causing a solidified material to form in the first region;

providing a second layer of the particulate material over the first layer; and

dispensing the fluid onto a first region of the second layer.

A⁹ 93. (Amended) The method of claim 92, wherein the anionic polyelectrolyte is selected from the group consisting of sulfonated polystyrene, polyacrylic acid, polymethacrylic acid, polyvinyl sulfonic acid, alkali metal salts of polyacrylic acid, alkali metal salts of polymethacrylic acid, alkali metal salts of polyvinyl sulfonic acid, ammonium salt of polyvinyl sulfonic acid, ammonium salt of sulfonated polystyrene, ammonium salt of polyacrylic acid, ammonium salt of polymethacrylic acid, copolymer of sodium styrene sulfonate with maleic